

Appln. No. 10/816,411
Amdt. Dated June 3, 2005
Reply to Office Action of March 8, 2005

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at line 8 of page 4 and ending at line 2 of page 5 as follows:

FIG. 4 shows a conceptual constitution of an imaging region in a CMOS image sensor. A CMOS image sensor 21 is constituted by providing an imaging region where a plurality of sensor portions 23 by means of photodiodes are formed in a matrix form on a semiconductor substrate 22, one pixel is formed between this sensor portion 23 and a plurality of MOS transistors, an insulation ~~film 25~~film 24 between wiring layers of multiple layers which correspond to wiring layers 251, 252 and 253 of a first layer, a second layer and a third layer in this example are formed through an interlayer insulation film 24, and further, an on-chip micro lens 28 corresponding to a color filter 27 and rectangular sensor portion 23 thereon is formed through a flat formed layer 26. According to this CMOS image sensor 21, for example, the vertical signal line corresponds to a wiring layer 251 of the first layer; the horizontal reset line, the vertical readout line and vertical selection line correspond to a wiring layer 252 of the second layer; and the power supply line corresponds to a wiring layer 253 of the third layer. In this CMOS image sensor 21, the exit pupil correction of the on-chip micro lens 28 is also performed similarly as in FIG. 10.

Please amend the paragraph beginning at line 16 of page 5 and ending at line 2 of page 6 as follows:

Now, for example, in case when the opening of the light shielding ~~film 31~~film 32 is formed by a wiring layer 253 a of the uppermost layer and a CMOS image sensor has a sensor portion

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23 of a shape where the left lower corner portion of a square shape is shielded obliquely as shown in FIG. 5, the sensitivity of each place becomes as shown in FIG. 5 when an optimum exit pupil correction is performed at the left upper and lower positions <2>, <3> and at the right lower corner position <4> on the imaging region (picture screen) 31 (see FIG. 6). More specifically, the sensitivity deterioration at the right upper corner position <1> of the picture screen 31 is remarkable.

Please amend the paragraph beginning at line 11 of page 12 and ending at line 19 of page 12 as follows:

In the exemplified embodiment, as shown in FIG. 1, a fewer amount of the exit pupil correction can be performed at the right upper corner position <1> compared with those at the left upper corner position <2>, at the left lower corner position <3> and at the right lower corner position <4> with respect to the imaging region 42. Here, how much the center of the reduction magnification correction should be deviated can be determined, for example, according to a result after carrying out an optical simulation with respect to each ~~each~~ position.

Please amend the paragraph beginning at line 8 of page 14 and ending at line 14 of page 14 as follows:

In the exemplified embodiment, a fewer amount of the exit pupil correction can be performed at the position <3> compared with those at the positions <1>, <2> and <4>. In this case, too, how much the center of the reduction magnification correction should be deviated can be determined,

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for example, according to a result after carrying out an optical simulation with respect to each each position.